

Translation

PATENT COOPERATION TREATY

PCT/EP2003/007202



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PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2002P15864WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/007202	International filing date (day/month/year) 04 July 2003 (04.07.2003)	Priority date (day/month/year) 26 September 2002 (26.09.2002)
International Patent Classification (IPC) or national classification and IPC G05B 23/02		
Applicant SIEMENS AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 07 November 2003 (07.11.2003)	Date of completion of this report 28 December 2004 (28.12.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/007202

I. Basis of the report

1. With regard to the elements of the international application:*

☐ the international application as originally filed

☒ the description:

pages 1-21, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☒ the claims:

pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 1-13, filed with the letter of 04 November 2004 (04.11.2004)

☒ the drawings:

pages 1/2-2/2, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/fig _____

5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

The amendments submitted in the letter of 3 November 2004 faxed on 4 November 2004 introduce substantive matter which, contrary to the requirements of PCT Article 34(2)(b), goes beyond the disclosure of the international application as filed. The amendments are as follows:

Claim 14 contains the additional feature
that the KI-based algorithm improves the combined
effect of the individual relationships in the
dynamic model.

The passage in the description on page 4, lines 6-14,
which was cited by the applicant, discloses
that the combined effect of these partial models
for a system description are then improved by the
KI-based algorithm during operation.

The fact that *the combined effect of the individual
relationships in the dynamic model is improved* could not
be found anywhere in the application.

Therefore, the content of claim 14 goes beyond the
disclosure of the international application as filed and
is not admissible.

Claim 14 will not be taken into account in the rest of
the procedure (PCT Rule 70.2(c)).

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-13	YES
	Claims		NO
Inventive step (IS)	Claims	1-13	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-13	YES
	Claims		NO

2. Citations and explanations

This report makes reference to the following document:

D1: US-B1-6 353 815 (GARCIA HUMBERTO E ET AL) 5 March 2002 (2002-03-05).

Novelty (PCT Article 33(2))

D1 is regarded as the prior art closest to the subject matter of claim 1. It discloses:

a device for monitoring a technical installation comprising several systems (column 10, lines 49-53), characterized by

- *at least one analysis module (the workstation in column 10, lines 5-6 corresponds to the analysis module according to the invention) that comprises a dynamic model (column 10, lines 49-53 and column 11, lines 23-24) of at least one of the systems in the technical installation, operating data being suppliable to the analysis model as input data (column 10, lines 60-64 and column 11, lines 8-9), and by*
- *at least one KI-based algorithm in the analysis module (column 11, lines 48-50), by*

means of which algorithm the dynamic model of the system is improved during system operation (column 12, lines 3-11),
output data that characterizes the momentary and/or future operational behavior of the system being determinable by means of the analysis module (column 10, lines 49-53 and lines 60-64).

Therefore, the subject matter of claim 1 differs from the known device in that the KI-based algorithm

- *searches in system operating data or in system operating and structural data for dependent relationships among operating data or operating and structural data by means of artificial intelligence methods and in that*
- *the relationships identified thereby are integrated into the dynamic model as new relationships.*

Consequently, the subject matter of claim 1 is novel (PCT Article 33(2)).

Inventive step (PCT Article 33(3))

The problem to be solved by the present invention can therefore be regarded as that of providing an alternative solution for improving the dynamic model of the system during system operation.

The solution to the problem of interest as proposed in claim 1 of the present application involves an inventive step (PCT Article 33(3)) for the following reasons:

The search for dependent relationships in the operating data or in the operating and structural data and the

integration of these newly discovered relationships into the dynamic model are neither known from the known prior art nor obvious to a person skilled in the art.

Claims 2-9 are dependent on claim 1 and therefore likewise meet the PCT requirements for novelty and inventive step.

The subject matter of claim 10 relates to the method implemented by the device in claim 1 and is therefore novel and inventive (PCT Article 33(2) and (3)).

Claims 11-13 are dependent on claim 10 and therefore likewise meet the PCT requirements for novelty and inventive step.